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09/783,158

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Michael Dewayne Finke

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11/26/2003

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EXAMINER

EDWARDS JR, TIMOTHY

ART UNIT

PAPER NUMBER

2635

DATE MAILED: 11/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/783,158

Applicant(s)

FINKE ET AL.

Examiner

Timothy Edwards, Jr.

Art Unit

2635

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-92 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 38-40, 65-67 and 85-92 is/are allowed.
- 6) ☒ Claim(s) 1-23, 31-33, 35-37, 41-50, 53-61 and 68-82 is/are rejected.
- 7) ☒ Claim(s) 24-30, 34, 51, 52, 62-64, 83 and 84 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement filed March 26, 2003 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered. Please resubmit all items not initialed on PTO-1449.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6,9,12,13,16-20,31-33,36,37,41,43-50,53-59 are rejected under 35 U.S.C. 102(b) as being anticipated by Scherbatskoy [US 5.113,379].

Considering claim 1, Scherbatskoy discloses a communication system for a well bore system having a) a transmitter for generating down hole signals in a fluid flow (see col 9, lines 28-37); b) operating the transmitter without stopping the flow pump (see col 9, lines 38-40 and col 59, lines 52-61); c) a down hole receiver for decoding a signal (see col 56, lines 43-49).

Considering claim 2, Scherbatskoy discloses the limitation of this claim in col 16, lines 6-11.

Considering claim 3, Scherbatskoy discloses the limitation of this claim in col 59, line 62 to col 60, line 17.

Considering claim 4, Scherbatskoy discloses the limitation of this claim in col 9, lines 27-37.

Considering claim 5, Scherbatskoy discloses the limitation of this claim in col 9, lines 27-37 and col 14, lines 45-57.

Considering claim 6, Scherbatskoy discloses the limitation of this claim in col 61, line 51 to col 62, line 11.

Considering claim 9, Scherbatskoy discloses the limitation of this claim in col 56, lines 60 to col 58, lines 4-25.

Considering claim 12, Scherbatskoy discloses the limitation of this claim see fig 32, item 744.

Art Unit: 2635

Considering claim 13, Scherbatskoy discloses the limitation of this claim in col 57, lines 4-22.

Considering claim 16, the limitation of this claim is interpreted and rejected as stated in claim 13.

Considering claim 17, Scherbatskoy discloses the limitation of this claim in col 57, lines 10-25.

Considering claims 18,19, Scherbatskoy discloses the limitations of these claims in col 9, lines 38-55 and col 57, lines 4-22.

Considering claim 20, the limitation of this claim is interpreted and rejected as stated in claim 18.

Considering claim 31, Scherbatskoy discloses the limitation of this claim in col 9, lines 28-37.

Considering claim 32, Scherbatskoy discloses the limitation of this claim see fig 9, item 172.

Art Unit: 2635

Considering claim 33, Scherbatskoy discloses the limitation of this claim in col 57, lines 10-25.

Considering claim 36, the limitations of this claim are interpreted and rejected as stated in claims 1, 4, and 9.

Considering claim 37, the limitations of this claim are interpreted and rejected as stated in claims 1, 4, and 9.

Considering claim 41, the limitations of this claim are interpreted and rejected as stated in claims 1, 4, and 9.

Considering claim 43, Scherbatskoy discloses the limitation of this claim in col 9, lines 28-37, and see fig 4A.

Considering claim 44, the limitations of this claim are interpreted and rejected as stated in claim 1.

Considering claims 45,46,49,50 Scherbatskoy discloses the limitations of these claims in col 56, lines 64-68.

Art Unit: 2635

Considering claim 47, Scherbatskoy discloses the limitation of this claim in col 57, lines 5-12.

Considering claim 48, Scherbatskoy discloses the limitation of this claim in col 56, lines 64-68.

Considering claim 53, Scherbatskoy discloses the limitations of this claim in col 60, lines 12-24 and col 61, lines 51-68.

Considering claims 54,57 Scherbatskoy discloses the limitation of this claim in col 37, lines 20-55.

Considering claim 55, Scherbatskoy discloses the limitation of this claim in col 61, line 63 to col 62, line 11.

Considering claim 56, Scherbatskoy discloses the limitation of this claim in col 61, lines 58-63.

Considering claims 58,59 Scherbatskoy discloses the limitation of this claim in col 57, lines 5-12.

Claims 68,69 are rejected under 35 U.S.C. 102(b) as being anticipated by Tubel et al [US 5,959,547].

Considering claims 68,69 Tubel discloses the limitation of this claim in col 15, lines 30-42.

Claims 74,79,80 are rejected under 35 U.S.C. 102(b) as being anticipated by Biglin, Jr. et al [US 6,105,690].

Considering claim 74, Biglin discloses the limitation of this claim in col 6, lines 54-64 and col 12, lines 55-61.

Considering claims 79, Biglin discloses the limitation of this claim in col 4, lines 54-64.

Considering claims 80, Biglin discloses the limitation of this claim in col 7, lines 38-45.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7,14,15,21-23,34, are rejected under 35 U.S.C. 103(a) as being unpatentable over Scherbatskoy '379.

Considering claim 7, Scherbatskoy does not specifically recite the algorithm of his receiver interprets one bit of information in a minimum of approximately two seconds. One of ordinary skill in the art would readily recognize the use of a microprocessor (having a algorithm in its memory) to interpret digital data is well known in the art. Scherbatskoy shows in fig 4A the use of a processor (103) in a down hole assembly and discloses in col 9, lines 28-37 conveying commands to a down hole apparatus. Therefore, it would have been obvious to one of ordinary skill in the art to use an algorithm with an interpretation time which, would accommodate the need of his system in the Scherbatskoy because Scherbatskoy is concern with the interpretation of data transmitted to a down hole processor.

Considering claims 14,15 Scherbatskoy does not specifically recite the flow restrictor is a jet nozzle or is formed of tungsten carbide. However, Scherbatskoy discloses the use of a device, which, controls the flow of fluid to create a pressure pulse. Therefore, it would have been obvious to one of ordinary skill in the art to use an equivalent device to create a pressure pulse.

Considering claims 21-23, the limitations of these claims is interpreted and rejected as stated in claim 14.

Considering claim 35, Scherbatskoy does not specifically recite the transmitter and control system is intrinsically safe. However, one of ordinary skill in the art would readily recognize the sending of data by an operator to a down hole assembly would inherently be intrinsically safe. Therefore, it would have been obvious to one of ordinary skill in the art this limitation is within the scope of the Scherbatskoy system.

Claims 8,42,60,61 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scherbatskoy as applied to claim 1 above, and further in view of Montgomery [US 5,331,318].

Considering claim 8, Scherbatskoy does not specifically recite the algorithm of his receiver performs an error-checking function. However, error checking of transmitted data is well known in the art. Montgomery teaches a down hole receiver having error-checking capability (see col 5, line 47 to col 6, line 3). One of ordinary skill in the art would readily recognize the desirability of error checking in a critical environment, such as a well bore environment. Therefore, it would have been obvious to one of ordinary skill in the art to modify the receiver of the Scherbatskoy system to include error-checking as taught by Montgomery because both system are concern with the communication of data in a well bore environment.

Art Unit: 2635

Considering claim 42, the limitations of this claim are interpreted and rejected as stated in claims 1, 4, and 8; except cross-correlation of a waveform (see Scherbatskoy col 37, lines 20-55).

Considering claims 60,61, the limitations of these claims is interpreted and rejected as stated in claim 8.

Claims 10,11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scherbatskoy as applied to claim 1 above, and further in view of Mumby [US 4,550,392].

Considering claim 11-12, Scherbatskoy does not specifically recite a flow restrictor is changeable to adjust a quantity of flow in by-pass line. However, Scherbatskoy discloses the use of a flow control device for allowing fluid to flow through a by-pass line. Mumby teaches in col 3, lines 26-35 the use of a flow restrictor, which, is changeable to adjust a quantity of flow in by-pass line. Therefore, it would have been obvious to one of ordinary skill in the art to modify the flow control device of the Scherbatskoy system to a flow restrictor device as taught by Mumby because both system are concern with transmitting data via drill fluid and by-passing a quantity of the fluid to create a pressure pulse.

Art Unit: 2635

Claims 70-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tubel '547 as applied to claim 69 above, and further in view of Biglin '690.

Considering claim 70-72, Tubel does not specifically recite the limitations of these claims. however, examiner takes official notice the use of a steerable drilling tool is well known in the art as taught by Biglin in col 6, line 54 to col 7, line 3 and col 12, lines 55-65. therefore, it would have been obvious to one of ordinary skill in the art to use known methods associated with implementing the steering of a drilling tool.

Claims 75-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Biglin '690 as applied to claim 74 above, and further in view of Tubel '547.

Considering claims 75,76, Biglin does not specifically recite controlling a plurality of directional drilling operations at a plurality of different drilling sites or from a location remote from the drilling site. However, Tubel teaches, in col 5, line 66 to col 6, line 14, the controlling a plurality of well bore sites from a remote location. Therefore, it would have been obvious to one of ordinary skill in the art to modify the system of Biglin to have a control means at a remote location as taught by Tubel because both references are concern the monitoring of multiwell and multizone in a well bore environment.

Considering claim 77,78, Biglin does not specifically recite the limitations of these claims. however, examiner takes official notice the use of a steerable drilling tool is well

Art Unit: 2635

known in the art as taught by Biglin in col 6, line 54 to col 7, line 3 and col 12, lines 55-65. therefore, it would have been obvious to one of ordinary skill in the art to use known methods associated with implementing the steering of a drilling tool.

Claims 81,82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Biglin '690.

Considering claims 81,82 Biglin does not specifically recite changing the operation by taking a sample using a drilling formation tester or changing the state of a stabilizer while drilling. One of ordinary skill in the art would readily recognize the changing operations are within the scope of the Biglin system because Biglin is concern with controlling a steerable drill string.

Allowable Subject Matter

Claims 24-30,34,51,52,62-64,83,84 are objected to as being dependent upon a rejected base claim, but would be allowable if, claims 24,34,51,62,83 are, rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 38-40,65-67,85-92 are allowed.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Howells et al [US 4,556,884] discloses the use of duplex communication. Kerr et al [US 6,536,529] and Vaynshteyn [US 6,182,764] both references are concern with the use of controllable flow restrictor used to create pressure pulses.

1. Any inquiry concerning this communication should be directed to Examiner Timothy Edwards at telephone number (703) 305-4896. The examiner can normally be reached on Monday-Thursday, 8:30 a.m.-4:00 p.m. The examiner cannot be reached on Fridays.

If attempt to reach the examinee by telephone are unsuccessful, the examiner's supervisor, Michael Horabik, can be reached on (703) 305-4704.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700, Mon-Fri., 8:30 a.m.-5:00 p.m.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or fax to:

(703), 872-9314 (for formal communications intended for entry)

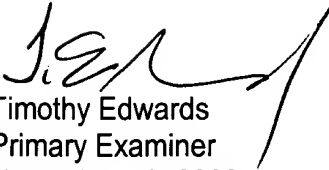
Or:

Art Unit: 2635

(for informal or draft communications, please label "PROPOSED"
or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121

Crystal Drive, Arlington. VA, Sixth Floor (Receptionist).



Timothy Edwards
Primary Examiner
November 19, 2003